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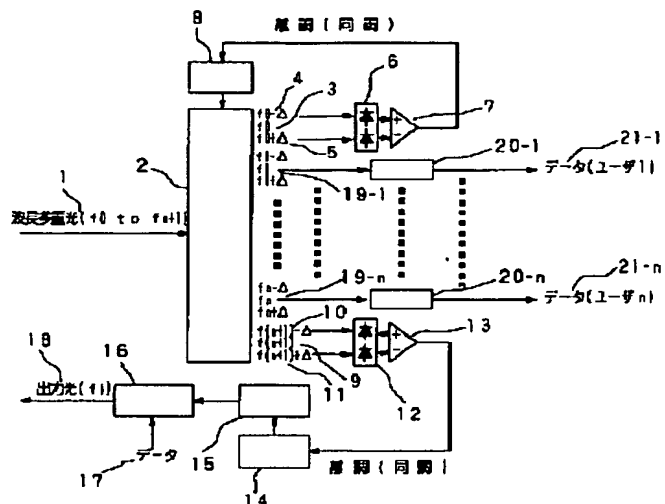
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TITLE : WAVELENGTH
MULTIPLEXER/DEMULTIPLEXER



ABSTRACT : PROBLEM TO BE SOLVED: To provide the wavelength multiplexer/demultiplexer by applying synchronization control to wavelength bands of laser beams individually stimulated so as to decrease the wavelength band thereby improving a frequency utilizing efficiency.

SOLUTION: A photo diode 6 is provided to wavelength control ports 4,5 whose transmission wavelength is f_0 and a wavelength of an array waveguide grading filter AWGF2 is controlled so that an output difference is eliminated through electric conversion. The transmission wavelength characteristics are relatively arranged by conducting the similar operation for all nodes. On the other hand, the light stimulated from a node is outputted to a wavelength separate port 9 of the AWGF2. A photo diode 12 is placed to wavelength control ports 10, 11, and a wavelength of a laser diode 15 is controlled so that an output difference is eliminated through electric conversion. Thus, the wavelength of a laser diode 15 is in matching with the transmission wavelength of the wavelength separate port 9. Other lights (wavelength band f_1 - f_n) are separated by each wavelength at the AWGF2.

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